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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

June 4, 2002

REPLY TO THE ATTENTION OF:

(SR-6J)

Mr. Steven D. Smith
Solutia, Inc..
P.O. Box 66760
St. Louis, Missouri 63166-6760

RE: Approval - Modifications to Support Sampling Plan
Sauget Area 2 Site - St. Clair County, Illinois

Dear Mr. Smith:

The United States Environmental Protection Agency (U.S. EPA) has evaluated your May 23, 2002, proposal (Attachment) to make the following three modifications to the Sauget Area 2 Support Sampling Plan (SSP):


1. To use PROSONIC to install the six bedrock monitoring wells using the sonic drilling method. Temporary sonic override casing will be used during the drilling and installation of these wells in lieu of 5-inch permanent casing. PROSONIC polycarbonate liners will be used to capture and retain sediment samples for subsequent geotechnical analysis.
2. To use PROSONIC to install 27 one-inch piezometers in nine borings, with three piezometers in each boring, set at approximate depths of 20, 80 and 140 feet, respectively.
3. To collect samples for geotechnical analysis using the PROSONIC procedure, from each of the three major hydrologic units during each of the 9 deep piezometer installations. The current workplan calls for the collection of samples for geotechnical analysis at 5-foot intervals in each of the 9 deep piezometers which would result in over 250 geotechnical samples.

Based on this evaluation and experience at other sites, U.S. EPA is agreeable to these proposed modifications. However, some concern remains regarding the nested piezometers and the ability to provide an adequate seal between sampling intervals within a single borehole. This issue should be more fully addressed in the addendum to the SSP. If it is determined in the field that the screened intervals can not be adequately isolated, separate boreholes will be required for each piezometer.

Pursuant to Section 2.2 of the November 24, 2000, Administrative Order on Consent, U.S. EPA approves the modifications to the RI/FS Support Sampling Plan for the Sauget Area 2 Site contained in your May 23, 2002, letter. Within 14 days, submit an addendum to the SSP documenting these changes.

If you have any questions regarding this letter or the enclosure, please feel free to call me at (312) 886-4592.

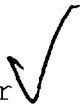
Sincerely,


Mike Ribordy
Remedial Project Manager
Superfund Division

Attachment

cc: Sandra Bron, IEPA
Peter Barrett, CH2M HILL

bcc: Record Center



ATTACHMENT

Sauget Area 2 Sites Group

May 23, 2002

Mr. Mike Ribordy
U.S. EPA - Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

RE: Sauget Area 2 Sites

Deliver by Electronic and Overnight Mail

Dear Mike:

As we discussed by phone, the SA2SG is requesting the approval of three changes to the SSP work plan. These proposed changes are as follows:

1) Bedrock Monitoring Well Installations:

We propose to use PROSONIC to install the six bedrock monitoring wells using the sonic drilling method. Temporary sonic override casing will be used during the drilling and installation of these wells in lieu of 5-inch permanent casing.

Steps include:

- a. Continuously advance four-inch soil core barrel and override casing in ten-foot intervals to anticipated total depth of 140 feet (until bedrock is encountered and visually confirmed by the URS field representative), and then five additional feet into bedrock.
- b. Leave 6-inch temporary sonic override casing at the point of being five feet into bedrock. This will serve as the isolation casing to prevent any movement of contaminants into the bedrock formation. When the six-inch casing is sonically resonated, the formation around the casing is energized. When the resonation is stopped, the energized formation seals back around this casing, leaving a tight seal to prevent groundwater migration

- downward along the casing wall. A bentonite plug will also be set in the bottom of the casing prior to advancing further into bedrock, adding to the integrity of the seal.
- c. The bedrock will be cored using the sonic technique, resulting in a four-inch open rock hole on removal of the core barrel.
 - d. The two-inch PVC well will then be constructed in the borehole. The six-inch casing will be resonated during removal to form an effective seal against the borehole wall far superior to what could be created in a hole using "mud rotary" methods. Grout will always be maintained up inside of this temporary casing during removal to protect against formation collapse. (The mud rotary hole experiences movement depending on the formation and generally has to be oversized to allow the installation of the casing to the bottom of the hole because the boring is typically not straight or aligned). This effectively precludes the presence of a high-integrity grout seal along the entire length of the casing as the casing will likely be touching the borehole wall in many intervals along the length of the casing. The vibratory action of the sonic method ensures an effective seal, the holes are straight because they are 'cased', and all the mud contamination of the formation and the increased IDW handling and disposal costs are eliminated. This entire process will require only two shifts to install a well, so the time risks of having an open borehole are also minimized with respect to migration of contaminants.

PROSONIC offers the use of polycarbonate liners inside a modified sonic core barrel to capture and retain sediment samples for subsequent analysis. Liners will be used to capture soil samples at the specific formation intervals as required by the SSP. On retrieval from the borehole, these liners will be capped and sealed in the field, and shipped for subsequent geotechnical analysis.

2.) Piezometer Installations in Overburden:

The SA2SG proposes to use PROSONIC to install 27 one-inch piezometers in nine borings, with three piezometers in each boring, set at approximate depths of 20, 80 and 140 feet, respectively. The impetus for the design is to significantly reduce total drill footage as well as the quantity of investigation-derived waste. Borings will be installed by continuously soil coring and temporarily casing to approximately 140 feet using the sonic (or 'rotasonic') drilling method consisting of four-inch diameter core barrel and six-inch diameter override casing.

On reaching total depth with the '4x6' system, the three one-inch nested piezometers will be installed within the six-inch temporary casing and constructed with one-inch PVC screen and filter pack, riser, and bentonite chips or pellets between screened intervals. To ensure a quality installation, seven-inch diameter sonic override casing will be installed to 80 feet, and 8-inch diameter sonic override casing will be installed to 20 feet to provide ample annular space for the nested installations.

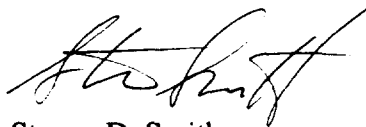
All temporary casings will be extracted during well construction while maintaining bentonite levels up inside the casing so no borehole collapse occurs during installation. Specifically, once the first, deep piezometer is set, the six-inch sonic casing will be removed while filter sand and bentonite is emplaced and bentonite is hydrated. Bentonite chips are proposed to ensure the top of each annular seal interval does not interfere with the next higher screened interval. Temporary sonic casings will be removed in the reverse order from which they were installed.

3.) Modification to the number of Geotechnical Samplings During the Piezometer Installation:

The SA2SG requests approval for a modification to the procedure identified in the workplan for the collection of geotechnical samples during the installation of the piezometers. The current workplan calls for the collection of samples for geotechnical analysis at 5-foot intervals in each of the 9 deep piezometers. This would result in over 250 geotechnical samples. Based on a review of the significant amount of geologic data that already exists from previous investigations in this area, it is felt that the geologic conditions are already well understood, and sampling every 5 feet at 9 locations would yield little or no new information. Alternatively, the SA2SG proposes that samples for geotechnical analysis be collected, using the Prosonics procedure outlined above, from each of the three major hydrologic units during each of the 9 deep piezometer installations.

If you have any questions on the above proposals please call.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Smith', with a stylized flourish at the end.

Steven D. Smith
Project Coordinator

Cc: SA2SG Technical Committee